A GENERATIVE GRAMMATICAL STUDY OF JAPANESE CAUSATIVIZATION— A TRANSFORMATIONAL APPROACH*

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October, 1976

* I am very grateful to Dr. Masayoshi Shibatani of USC who was kind enough to read through this paper. My special thank goes to Satoru Nakai who read the earlier version of this paper and gave me a comment which lead me to correction of many theoretical misconceptions. Then I want to show my profound gratitude for the kindness of R. G. Harrison and Linda Gillette who were willing to read my paper and to correct, if any, mistakes.

I Introduction

The purpose of this paper is to explore the various syntactic (and hence semantic) differences that can be observed between Japanese lexicalized causatives (henceforth LC's) and Japanese productive causatives (henceforth PC's).[1] I owe, in achieving this paper, some of the basic ideas concerning the linguistic analysis of lexical decompositions to the insightful papers by J. D. McCawley, P. M. Postal, and G. Lakoff.[2]

It is true that in the surface structure there arise various kinds of syntactic differences and semantic differences between the behavior of LC's and that of PC's, but this fact alone is not enough to deny the proposal in which LC's and PC's may be derived from *the same single base structure*.[3] As McCawley observes, the lexicalised causative "kill" seems to have an intrinsic implication "CAUSE TO DIE".[4] Probably this relation is a relation that, I suppose, should be captured at the level of the "base structure."[5] That is, I suppose, the logical implication of "kill" should be represented as a tree like McCawley's abstract semantic primitives: "CAUSE TO DIE", and the relation between which is tangible to a native speaker with his linguistic intuition. This being so, the logical notion of lexical decomposition may well be acknowledged. Hence, as McCawley and Postal respectively claim in their papers, their proposal of the necessity and presence of pre-lexical syntactic transformations such as pre-lexical predicate raising will make a strong argument against the interpretive semantic approach to causativization.

In this paper I am assuming something like the framework of generative semantics pro-

1 In this paper I owe the terminology of "lexicalized causatives" and "productive causatives" to Shibatani's papers which I will refer to afterwards.

2 McCawley's argument (1968) in which he tries to derive *kill* and "cause to die" from the same single underlying structure is now quite familiar among generative grammarians. Likewise Postal's argument (1971a) which he showed in his paper is also familiar. And G. Lakoff's paper (1971) is an insightful one in that he tried to capture the general nature of lexical decompositions.

3 I have used the term "base structure". This term must be strictly distinguished from the term "deep structure". The notion of the "base structure" is in no sense equivalent to that of "deep structure", for I am using the term to imply a kind of *conceptual* structure in which LC's and PC's may have the same linguistic status. However, at the level of "underlying structure" LC's and PC's are marked in quite different manners. Hence the logical analysis of, for instance, *kill* in which it is derived from something like the underlying semantic structure [CAUSE TO DIE] is an analysis which seems to be plausible only in the level of the conceptual structure. Some of the logical relations that are possibly captured at the level of conceptual structure seem to be lost at the surface structure level because of lexicalization transformations, ambiguity in semantic interpretations at the surface, and presumably actual phonetic and phonological interpretations.

4 According to the convention in generative semantics, I will, in this paper, represent semantic primitives by capital letters.

5 Japanese, for instance, has the LC form *kiseru* and its corresponding PC form *kisaseru*. Morphologically speaking, the underlying causative morpheme still remains even in the surface form of the LC *kiseru*. See Masayoshi Shibatani (1973), p. 5.

posed by McCawley and Postal.[6] Therefore I am also assuming that semantic representation may be directly mapped onto phrase-markers. What I want to demonstrate in the present paper is the following: LC's and PC's may be derived from the same single base structure as McCawley showed in his English examples (McCawley, 1968), but their underlying structures are different from each other. So this paper, in a sense, will give a support to the theoretical consideration in generative semantics. Hence I doubt the existence of the level of deep structure, at which all the lexical items must be inserted by lexical insertion transformations. Instead, we will assume a sequence of phrase-markers (P_0 . . . . . P_n) where P_0 is the semantic representation and P_n is the surface structure, and in such a sequence lexical items may be lexically inserted at any level of P_1—P_{n-1}. And an arbitrary phrase-maker P_i is called as the underlying phrase-marker which is one of those intermediate phrase-makers P_1—P_{n-1}. All of the pre-lexical transformations must be performed before the derivation of this phrase-marker. I will discuss this topic by using Japanese examples.

II Some Syntactic Topics

In this section I will discuss five arguments concerning syntactic behaviors of PC's and LC's.

II. 1 "Soo suru" Replacement

One of the basic arguments for not deriving LC's and corresponding PC's from the same single underlying structure is concerning the analysis of the Japanese " . . . X mo soo suru " (do so) construction. Shibatani,[7] at various occasions, notices the semantic difference which arises between the " soo suru " phrase which replaces an LC and that which replaces a PC. For example:

(1a) Taroo ga otooto o kuruma ni ***noraseru*** to, Hanako mo soo sita.
" When Taro made his brother get on a car, Hanako did so too."

(1b) Taroo ga otooto o kuruma ni ***noseru*** to, Hanako mo soo sita.
" When Taro had his brother get on a car, Hanako did so too."

(2a) Takeko ga imooto ni huku o ***kisaseru*** to, Akira mo soo sita.
" When Takeko made her sister put on the clothes, Akira did so too."

6 Cf. James D. McCawley (1973), p. 244. He says as follows:

I regard immediate constituent structure rather than parentheses as basic. Thus I consider the representations that I have sketched above as being more correctly given graphic form as tree diagrams than as strings of symbols. . . . My principal reason for this policy is that semantic representations are to form the input to a system of transformations that relate meaning to superficial form, and to the extent that these transformations have been formulated and justified, they appear to be stateable only in terms of constituent structure and constituent type, rather than in terms of configurations of parentheses and terminal symbols.

I am using something like this framework by McCawley in this paper.

7 For ex. M. Shibatani (1972), (1973) and (1975a).

(2b) Takeko ga imooto ni huku o *kiseru* to, Akira mo soo sita.

"When Takeko had her sister put on the clothes, Akira did so too."

As Shibatani points out, semantic ambiguity obviously occurs in the (a) examples of (1) and (2). For example, (1a) can mean either that "Hanako also made her brother get on a car" or that "Hanako herself got on a car". However (1b) is not appropriate for the second reading of (1a). I suppose that the above argument given by Shibatani concerning the referential ambiguity of the Japanese "soo suru" construction which replaces a VP with a PC is essentially correct. Yet his observation that the "soo suru" construction replacing a VP with an LC is not semantically ambiguous and that replacing a PC is semantically ambiguous in two ways is not valid enough as a piece of syntactic evidence. For this kind of fact should be handled rather in the semantics of causativization.

Indeed, Shibatani himself points out that a Japanese sentence with an LC in surface structure seems to have a simplex structure, and that a Japanese sentence with a PC in shallow structure a complex one.[8] This observation is correct, of course. It is no doubt necessary that we must make clear the semantic difference between LC's and PC's, but this is only a resultant problem derivable from our assumption that LC's and PC's are structurally different. Therefore we must somehow show the sufficient condition(s) that can corroborate our assumption that there is a purely syntactic difference at the underlying level between a sentence with an LC and one with a PC. That is, we must show a syntactic difference in the structural descriptions between the two causatives and, at once, must make clear the difference of the two derivational histories between the two. By achieving these sufficient conditions we can probably offer a plausible reason for the semantic fact that we have observed between the (a) and (b) examples in (1) and (2).

I want to demonstrate that an LC is a form of verb that has to undergo obligatory application of pre-lexical raising,[9] and that a PC is a form of verb that undergoes the application of post-lexical raising,[10, 11] (that is an amalgamation of lexical items). For this reason LC's and PC's

8 See, for instance, M. Shibatani (1975a), p. 245.

9 In interpretive semantics the argument of generative semantics in which such a transformation as pre-lexical predicate raising is assumed prior to the application of the lexical insertion of some lexical items should be presumably given a treatment from the viewpoint of morphology. That is, for interpretive semanticists this problem should be handled rather within the lexicon. However, this theory cannot account for the fact that there occurs the lexical insertion of some lexical items even after the derivation of the so-called "post-lexical" structure. To account for this fact in the framework of interpretive semantics, one must make a contradictory assumption with regard to the problem of lexical insertions.

10 I have used the term "post-lexical" in a sense different from that of Chomsky's paper (1971) in which Chomsky uses this term in a sense similar to "deep structure". In the framework of the present paper, I am using this term to imply the following grammatical relation: for example, to derive *sinaseru* in Japanese *sinu* (die) and *saseru* (cause) must be *a priori* derived from their semantic primitives as separate lexical items. After this operation another transformation which can amalgamate *lexical items*

cannot have the same single underlying structure and the same derivational history, as I have already mentioned in the introductory section of this paper. This topic will be given a detailed analysis in section II 4.

II. 2. Reflexivization

There seems to be a syntactic constraint that the Japanese reflexive form ***zibun*** "self" cannot refer to NP's other than the subject NP of the sentence in which it occurs. And Japanese reflexivization may be applicable across clause-boundaries. This is a generally accepted constraint.[12] Consider, for example

(3a) Taroo$_i$ wa Mariko$_j$ ni ***zibun***$_{i,j}$ no huku o kisaseta.
'Taro made Mariko put on self$_i$'s/ self$_j$'s clothes.'

(3b) Taroo$_i$ wa Mariko$_j$ ni ***zibun***$_{i,*j}$ no huku o kiseta.
'Taro had Mariko put on self$_i$'s/ *self$_j$'s clothes.'

(4a) John$_i$ wa Bill$_j$ ni ***zibun***$_{i,j}$ no kuruma ni noraseta.
'John made Bill get on self$_i$'s/ self$_j$'s car.'

(4b) John$_i$ wa Bill$_j$ o ***zibun***$_{i,*j}$ no kuruma ni noseta.
'John had Bill get on self$_i$'s/ *self$_j$'s car.'

(5a) Simon$_i$ wa Jack$_j$ ni ***zibun***$_{i,j}$ no boosi o kaburaseta.
'Simon made Jack put on self$_i$'s/ self$_j$'s hat.'

(5b) Simon$_i$ wa Jack$_j$ ni ***zibun***$_{i,*j}$ no boosi o kabuseta.
'Simon had Jack put on self$_i$'s/ *self$_j$'s hat.'

(6a) Kazuko$_i$ wa Kyooko' ni ***zibun***$_{i,j}$ no seisekisho o misaseta.
'Kazuko made Kyoko see self$_i$'s/ self$_j$'s achievement card.'

(6b) Kazuko wa Kyooko$_j$ ni ***zibun***$_{i,*j}$ no seisekisho o miseta.
'Kazuko showed Kyoko self$_i$'s/ *self$_j$'s achievement card.'

As we expect, in the (a) examples that contain PC's this shows up a semantic ambiguity: for for instance, (3a) has two readings by the scope of the referential opacity of the reflexive pronoun, but this is not the case in (3b). The latter sentence is in no ways ambiguous. Referring to this semantic fact observed in (3)-(6) is useful when we want to show the underlying structural difference between (a) and (b) sentences; however, this alone cannot be a

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themselves must be present to give a single lexical item *sinaseru*. In this sense the relevant rule under consideration must be post-lexically defined.

11 M. Shibatani also notices this fact in his paper. M. Shibatani (1975b) pp.517-520, 523-525. Yet I have already noticed this fact in my earlier version of this paper. Y. Nakai (forthcoming).

12 Reflexivization in Japanese seems to go forward generally. However, Noriko A. McCawley (1975) assumes that backward reflexivization may be possible in Japanese, for instance, in emotive causative sentences. We will not, however, go into the details of this problem here.

We have such examples as (7a', b') in which reflexive pronouns precede their antecedents. But we can explain these examples by the ordering of rule applications; in this case Reflexivization precedes Topicalization. This rule ordering seems to be language-independent. Cf. Postal (1971b) for a somewhat detailed analysis.

confirming piece of evidence for the analysis of not deriving LC's and PC's from the same underlying structure. And the claim that a sentence with an LC has a simplex structure and a sentence with a PC a complex embedding one is also insufficient. For the above analysis by Shibatani lacks validating evidence for the assumption in which we suppose that fact. We must discuss why this claim is convincing enough and what kinds of syntactic arguments and what pieces of syntactic evidence we can assign to this claim. This is the problem on which we must shed much more light.

We may discuss the relationship between Japanese reflexivization and passivization. For example, let us examine how these two transformations are related in the following examples in (7):

(7a) Mariko$_i$ wa Taroo ni yotte *zibun*$_i$ no huku o kisaserareta.
'Mariko was made to put on self$_i$'s clothes by Taro.'

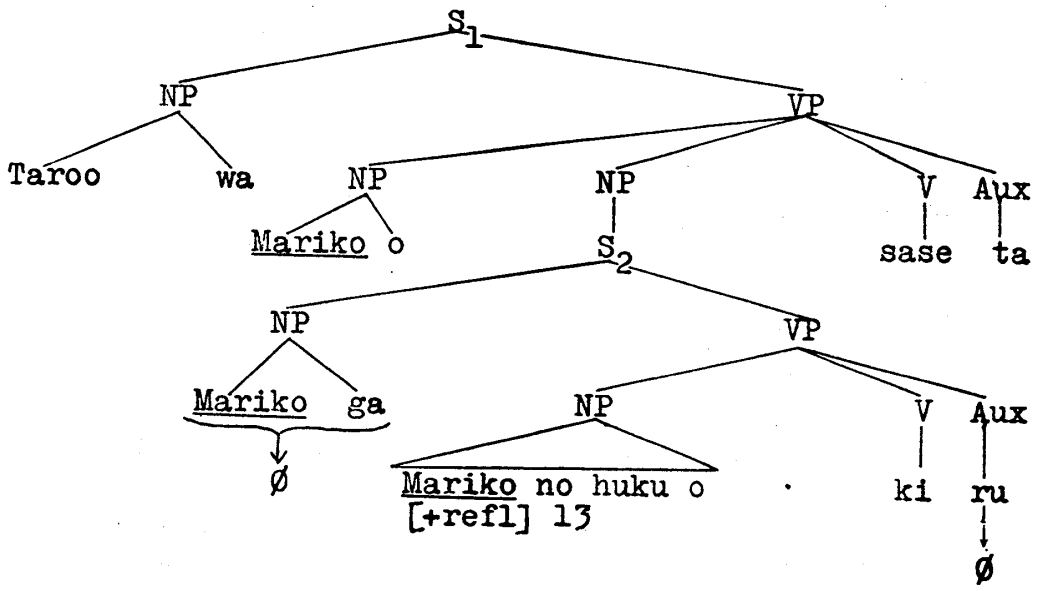
(7a′) *Zibun*$_i$ no huku o Mariko$_i$ wa Taro ni yotte kisaserareta.
'the same as (7a)'

(7b) Mariko$_i$ wa Taroo ni yotte *zibun*$_i$ no huku o kiserareta.
'Mariko was put on self$_i$'s clothes by Taro.'

(7b′) *Zibun*$_i$ no hukuo Mariko$_i$ was Taroo ni yotte kiserareta.
'the same as (7b)'

(7a), along with (7a′), is the corresponding passive to (3a), and (7b), together with (7b′), to (3b). The fact that there is no semantic ambiguity in (7a, a′) can be accounted for by our assumption that the Japanese reflexive form can refer only to the subject NP of the sentence. This constraint enables us to explain why (7a, a′) are not ambiguous in meaning. That is, we can claim that the underlying structure of (7a, a′) must be something like the structure given below:

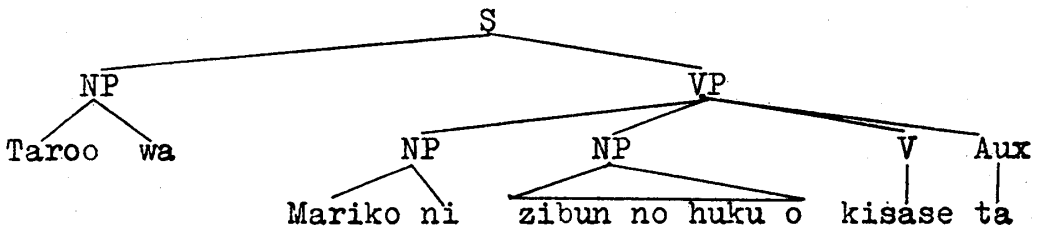
(8)



13 This structure is an underlying structure which is given for one of the two readings of (3a). The

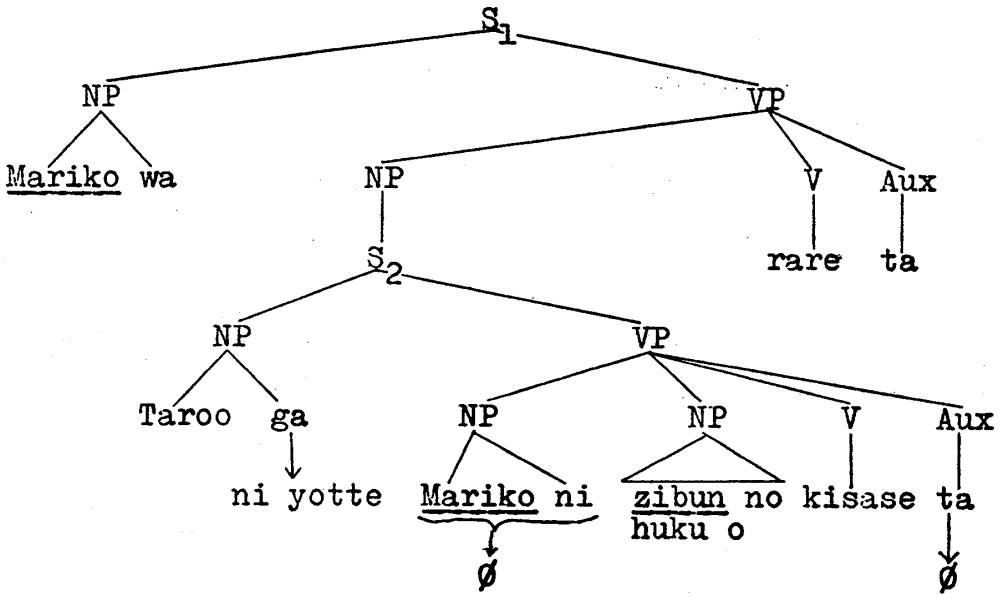
And the derivational history of (7a, a′) is as follows: first reflexivization applies obligatorily in the S_2 cycle, replacing the second Mariko by the reflexive pronoun *zibun*. Then the post-lexical raising attaches *kiru* before the main verb of the higher sentence *sase*, generating *kisaseru*. The syntactic structure of (8) at this level is given as (9):

(9)



If to this structure passivization applies, we can generate (7a) and (7a′). For example, (7a) has a structure like the following:

(10)

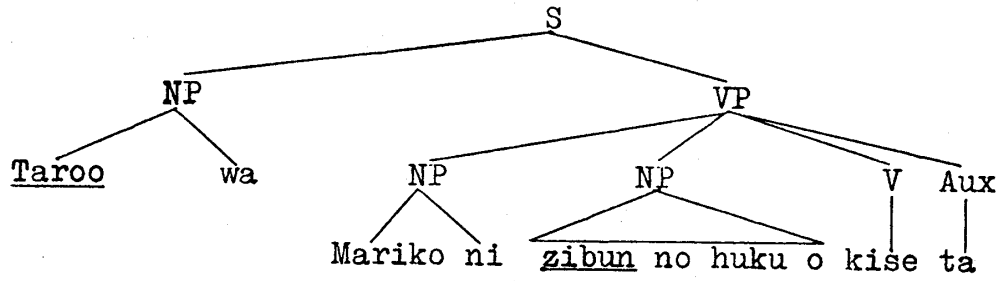


This structure equals the surface structure of (3).

The problem is rather how we can derive (7b) and (7b′) which have a reading different from that of the corresponding active counterpart (3b). The underlying structure of (3b) is given as follows:

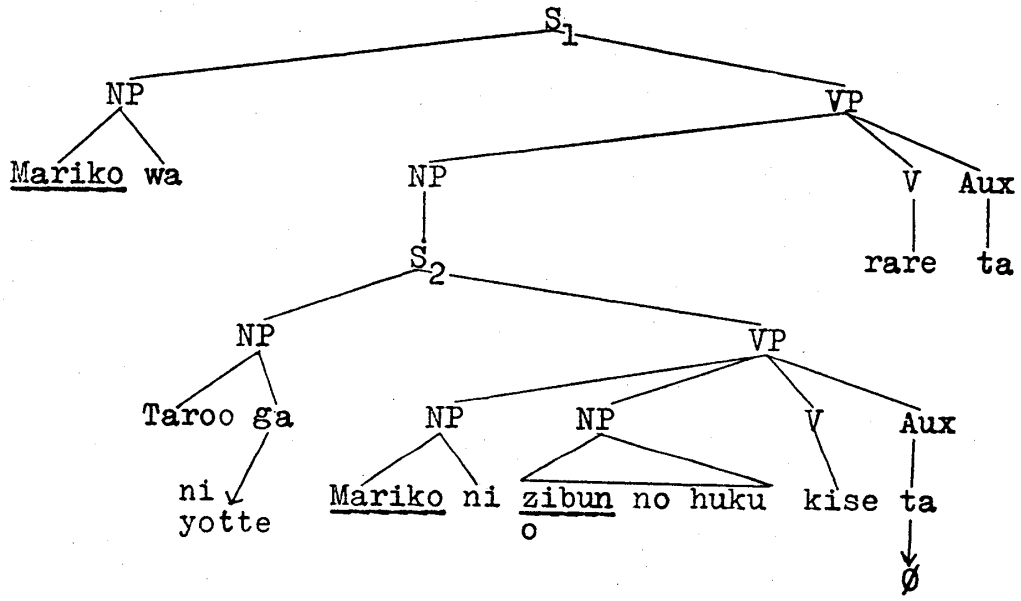
other one demands of us the description of the underlying structure in which the person in the NP node which occurs in the VP node of S_2 must be *Taroo*. Therefore, in this underlying structure reflexivization does not occur until the structural description for reflexivization is met, that is, until the structural description is met, in which the embedded verb *kiru* "put on" has already been raised up post-cyclically into the higher sentence and attached to the causative verb *sase*, and the S_2 node has been pruned by the Ross' convention. It is, of course necessary to determine whether or not a VP node is present in Japanese. However this is out of the domain of this paper.

(11)



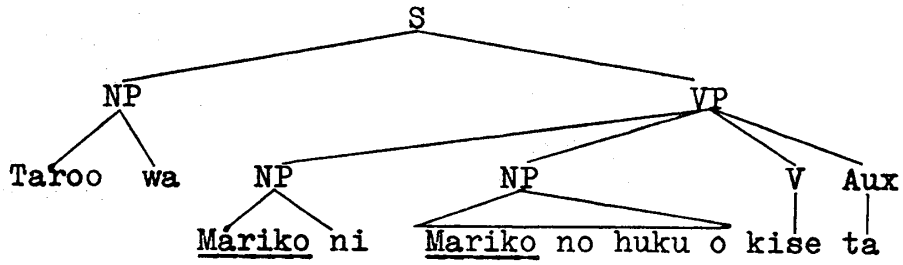
Even if passivization applies to this structure, it is obviously impossible to get the following structure which is equal to the target sentence under consideration.

(12)



This structure is not the corresponding passive sentence of (11), since the underlying structure of (12) must be the one given below:

(13)



The syntactic source structure of the passive sentence of (12) is uniformly determined as the verb of the sentence is an LC, while the syntactic source sentence of (3a) may have two possible variants as the main causative verb is a PC. Consequently, it is evident that an active causative sentence with an LC is not ambiguous in meaning, and that an active causative sentence with a PC is semantically ambiguous. This is a natural result, judging from the difference of the underlying structures of (8) and (13). (8) has a complex structure, whereas (13) does not. For in the structure of (8), "kiru+saseru" must be amalgamated in the trans-

formational component; however, *kiseru* is a lexical verb which has already undergone obligatory amalgamation of "KIRU+SASERU" in the level of the pre-lexical component of the grammar.

II. 3. Adverbial modification.

According to Shibatani's argument, which observes that when an adverbial occurs in a sentence, we can observe semantic differences between a sentence with an LC and a sentence with a PC. This semantic fact can be easily corroborated by the examination of the following pairs of sentences:

(14a) Taroo wa Ziroo ni *isoide* isya o yobi ni ikaseta.
'Taro promptly made Jiro go for a doctor.'
'Taro made Jiro go quickly for a doctor.'

(14b) Taro wa Ziroo ni *isoide* isya o yobi ni yatta.
'Taro promptly sent Jiro for a doctor.'

(15a) Sensei wa seito o *yukkuri* tomaraseta.
'The teacher slowly made the student stop.'
'The teacher made the student stop slowly.'

(15b) Sensei wa seito o *yukkuri* tometa.
'The teacher slowly stopped the student.'

(16a) Kangohu wa kanzya o *dammate* heya ni hairaseta.
'The nurse silently made the patient enter the room.'
'The nurse made the patient enter the room silently.'

(16b) Kangohu wa kanzya o *dammate* heya ni ireta.
'The nurse silently lead the patient into the room.'

We may well agree to Shibatani's observation that the (a) forms give two readings by the possibility of the scope of modification of the adverbials. While the (b) forms of (14)-(16) are not ambiguous in meaning. Yet this way of exposition can not be regarded as a piece of evidence for the assumption that the group of (a) sentences has a structure with an embedded sentence while the group of (b) sentences a simplex one.

As for myself, I suppose that this syntactic fact can be shown by examining the following pairs of sentences:

(17a) Tomodati ga yatte kuru koto o wasurete ita Taroo wa *awatete* otooto o ***suguni*** nikai e agaraseta.
'Taro, who has forgotten that a friend of his will come to see him, suddenly made his brother go upstairs *at once.*'

(17b) Tomodati ga yatte kuru koto a wasurete ita Taroo wa *awatete* otooto o *suguni* nikai e ageta.
'Taro, who has forgotten that a friend of his will come to see him, *suddenly* and ***at once*** took his brother upstairs.'

The most predominant reading in (17a) is one in which the adverb *awatete* "suddenly" refers to the action of Taro, the subject of the main sentence and another adverb *suguni* "at once" refers to the action of *otooto's* "his brother's" going upstairs. And another less predominant reading of this sentence gives us a situation in which both of the adverbs refer to the action by Taro. The latter interpretation of (17a) is the same as that of (17b). That is, (17b) lacks the former reading of (17a). If this line of argument is correct, we can probably suggest a significant principle that enables us to predict that the lexical insertion of adverbials is not generally applied until the lexical insertion of verbs occurs at the level of pre-lexical structure. This hypothesis can be incidentally justified by the following fact: that is, adverbs cannot be lexically decomposed. I have never seen nor heard of any piece of work that made clear the existence of, or probability of, lexical decompositions of adverbs. The reason why we can claim this is given by the following fact: if the second adverb *suguni* is lexically inserted in the cycle of the embedded structure before the lexical causative verb *ageru* "take someone upstairs" is generated by lexicalization transformation, we would never get the reading in which the adverb in question refers to Taro's action. To account for this semantic fact, we must assume that a sentence with an LC has already had a simplex structure when an adverb is lexically inserted. I will discuss this topic more sufficiently in the following section.

II. 4. Pre-lexical nature of LC's and Post-lexical nature of PC's[14]

I have already suggested that an LC and its corresponding PC must be determined through separate syntactic processes from respective underlying structures. To show this fact we will take up the following pair of sentences:

(18a) Ziroo ga otooto ni huku o kisaseru to, Saburoo mo soo sita.
'When Ziro made his brother put on the clothes, Saburo did so too.'

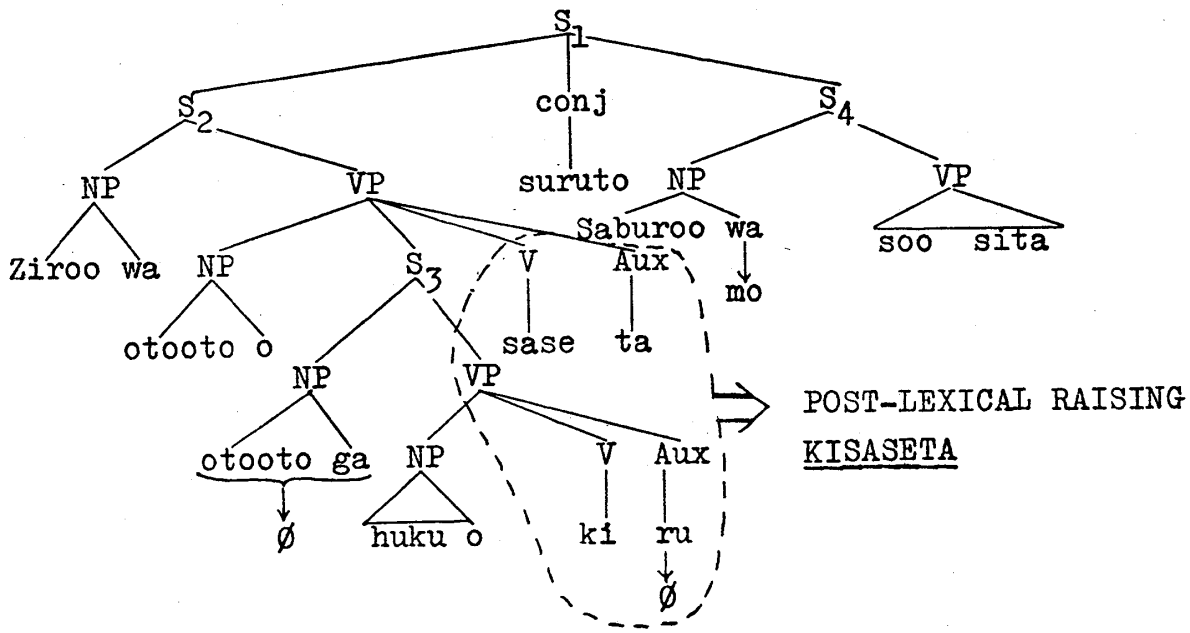
(18b) Ziroo ga otooto ni huku o kiseru to, Saburoo mo soo sita.
'When Ziro put the clothes on his brother, Saburo did so too.'

We may assume that the base phrase-markers of (18a) and (18b) are given in the same form. However we must notice that in (18a) the amalgamation of "kiru+saseru" must be performed at the level of the post-lexical component, i.e., in the transformational component, and that in (18b) the amalgamation of "KIRU+SASERU" must pertain to the pre-lexical level, i.e., the base component of the grammar. That is, the underlying structure of (18a) seems to be something like (19), while that of (18b) is like (20).

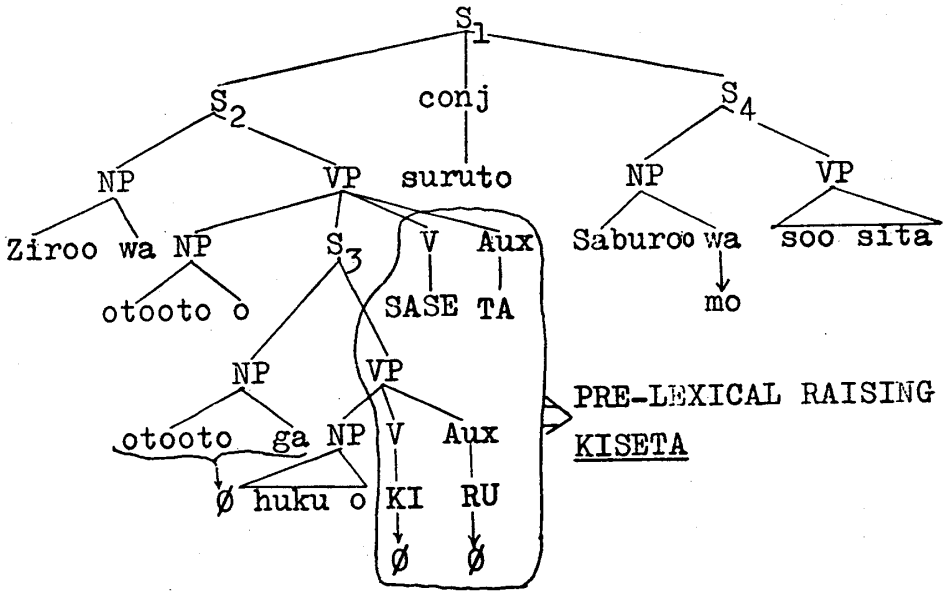
As we have observed in the phrase-markers of (19) and (20), the syntactic processes through which the LC *kiseru* and the PC *kisaseru* derive are quite different. We may here propose the following hypothesis. The Japanese underlying causative morpheme should be represented

14 Cf. M. Shibatani (1975b)

(19)



(20)



only as "SASE." And if, as in (20), at the level where other lexical items have already been inserted and the morpheme in question remains still unlexicalized, it should be obligatory that this semantic primitive be amalgamated with other semantic primitives, for example such as "KI" in this case. And if the underlying semantic primitives "KI" and "SASE" are separately lexicalized, they will be amalgamated on the level of the transformational component.

These two syntactic processes must be strictly distinguished, since we Japanese, can and at once, must discern the semantic differences which (18a) and (18b) present. We use (18a) to describe the situation in which *otooto* "his brother" has an obvious volition to put on the clothes, and he actually put on his clothes with his own will. That is, Ziro actually did not do the action of putting the clothes on his brother, and he only gave his brother a direction to

put on the clothes.[15] However this interpretation cannot be given in (18b). The most normal interpretation of (18b) is the reading in which we assume a situation in which *Ziroo* (coercively) put the clothes on his brother. And another possible situation for our choosing (18b) is the situation in which *otooto* cannot do the action of putting on the clothes for himself; for instance, he is simply a baby, etc. This problem, however, should be rather handled in the discussion of the semantics of causativization.

Let us take up another pair of sentences in which the reflexive pronoun occurs. (21a), as we have already examined above, is two ways ambiguous in meaning, while (21b) is not semantically ambiguous.

(21a) Titioya$_i$ wa musume$_j$ o *zibun*$_{i,\ j}$ no isi de yonensei no daigaku e hairaseta.

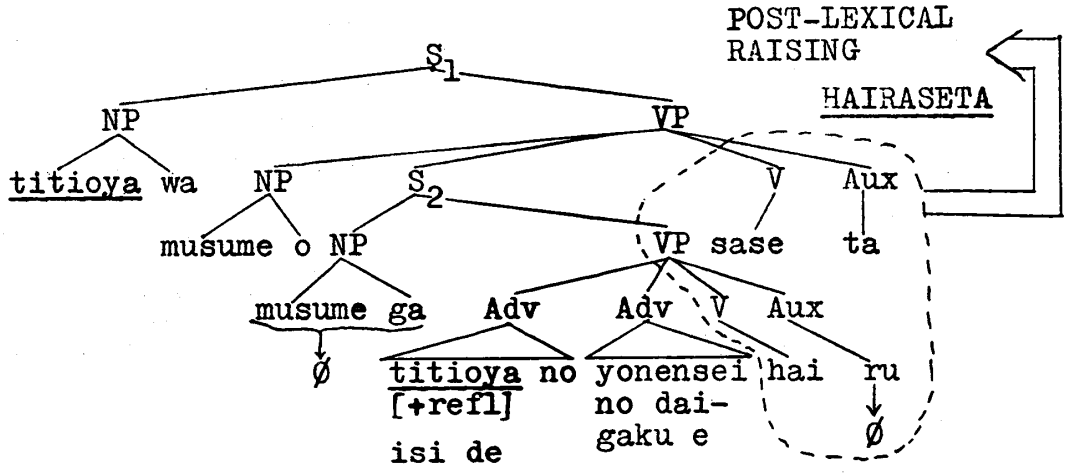
'The father made his daughter enter a four-year college with self$_i$'s/ self$_j$'s will.'

(21b) Titioya$_i$ wa musume$_j$ o *zibun*$_{i,*j}$ no isi de yonensei no daigaku e ireta.

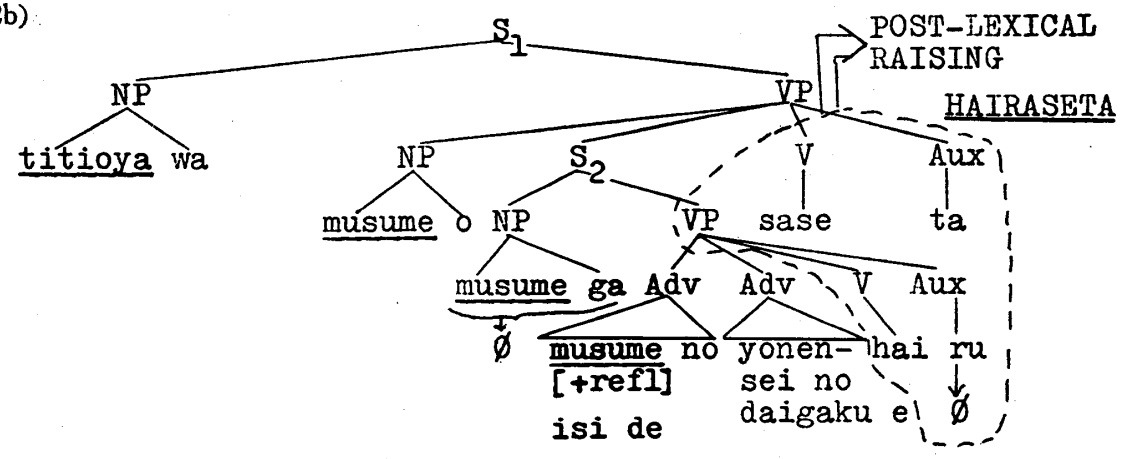
'The father entered his daughter in a four-year college with self$_i$'s/ *self$_j$'s will.'

From the fact that in (21a) the reflexive pronoun can refer either to *titioya* "the father" or *musume* "his daughter", we may conclude that this sentence has two different underlying sources as we will show below:

(22a)



(22b)

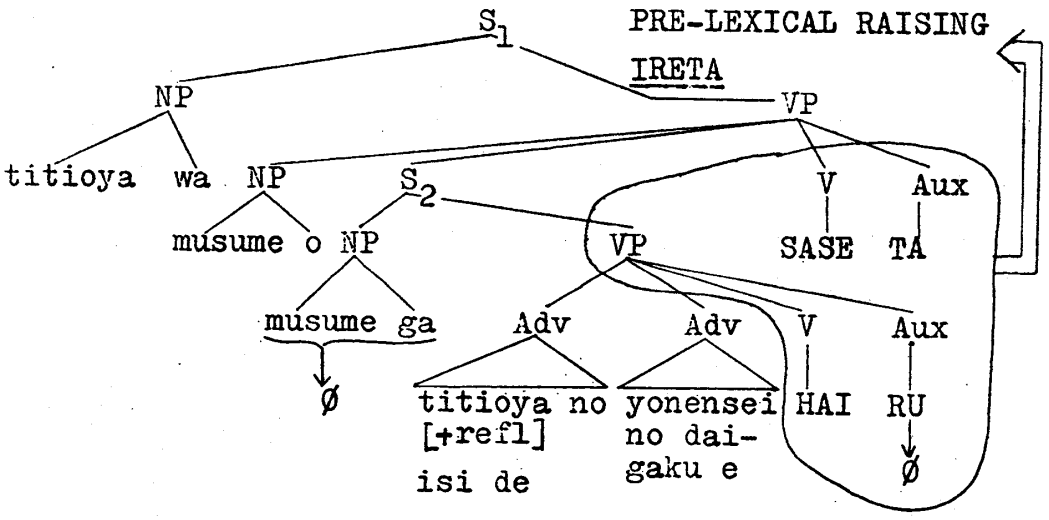


15 As Shibatani points out, (18a), on account of the surface structure constraint, gives two possible readings: the "coercive" and the "noncoercive" readings. See M. Shibatani, (1975a) pp. 243-244.

Let us consider the derivation of the surface structure of (22a). In the S_2 cycle only Equip-NP deletion deletes *musume ga* and then the Verb-Aux nodes are raised by the application of post-lexical raising. After these two syntactic processes have been applied, reflexivization applies to reflexivize the second occurrence of *titioya*. On the other hand, to derive the surface structure (22b), in S_2 reflexivization applies, replacing the second *musume* by *zibun*, then Verb-Aux nodes are raised up into the higher sentence to constitute a compound causative verb for *hairaseru*.

Next, let us consider how the surface structure of (21b) derives. Judging from the fact the reflexive form in (21b) cannot refer to *musume*, we may claim that the underlying structure of this sentence must be given in such a tree-structure as we show in (23) :

(23)



The syntactic processes to derive the surface structure of (23) (i.e., 21b) are: (1) at first, pre-lexical raising transformation must be applied to the underlying semantic predicates "HAIRU+SASERU" determining the surface form *ireru*.[16] (2) And Equi-NP deletion is obligatory in this case, together with the pruning of the S_2 node by the Ross' convention of pruning.

What I want to claim is this: in Japanese the causative morpheme is given only in one form *SASE* as I have already mentioned above. However the Japanese language has two different sorts of causative situation: the situation accompanying an LC and that accompanying a PC. Therefore it has two separate processes to derive an LC and a PC which has a semantic correspondence to its LC counterpart.[17]

II. 5. Particle Replacement

16 It is quite true that which causative forms the speaker chooses between *ireru* and *hairaseru* both of which derive from the same base phrase marker through pre-lexical raising for the former and through post-lexical raising for the latter depends simply upon his own intention of what he wants to say and of the referential information in his utterances. Hence the ambiguity in (21a) is only for the hearer. Because, to the speaker himself what he wants to mean is quite obvious. This ambiguity, however, does presumably occur in the actual discourse on account of the contextual situations and the environments of referential information where the causative sentence in question occurs.

17 Cf. M. Shibatani (1975a). Vol. 5, p. 242.

II. 5. 0. Japanese particles *o* and ***ni*** are interchangeably related in some cases.[18] And there seems to be a semantic constraint that Japanese PC's must have *animate* things with their own volition as their objects. We can show the validity of this constraint in both sentences with embedded intransitive sentences and sentences with embedded transitive ones. And again there seems to be another semantic constraint to the effect that Japanese LC's can have *animate* and *inanimate* things as their objects. We will examine how these two semantic constraints are related with the particle replacement in Japanese.

II. 5. 1. Let us take up those following sentences that have embedded intransitive sentences. And we will confirm whether the above semantic constraint is valid enough or not.

(24a) ??Taroo wa mado *o* ittusei ni akaseta.
'Taro made the windows open together at the same time.'

(24b) *Taroo wa mado ***ni*** ittusei ni akaseta.

(24c) Taroowa wa mado *o* ittusei ni aketa.
'Taroo opened the windows together at the same-'

(24d) *Taroo wa mado ***ni*** ittusei ni aketa.

(25a) ?Taroo wa kuruma no enzin *o* tomaraseta.
'Taro made the engine of the car stop.'

(25b) *Taroo wa kuruma no enzin ***ni*** tomaraseta.

(25c) *Taroo wa kuruma no enzin *o* tometa.
'Taro stopped the engine of the car.'

(25d) *Taroo wa kuruma no enzin ***ni*** tometa.

From a scrupulous observation of (24a) - (25d), we can claim the following linguistic facts of Japanese: the (a) forms seem to be somewhat abnormal.[19] The (b) forms in (24) and (25) are both ungrammatical. The (c) forms are fine, and the (d) forms are also ungrammatical. Here the natural suggestion is that we may present the following principles.

PRINCIPLE I Japanese PC's cannot generally take inanimate things as their surface objects. Even in an exceptionally possible sentence such as (25a), the particle replacement is impossible, and *o* may be possible to occur in this case.

18 In his paper Shibatani claims that there is a surface structure constraint concerning particles to the effect that the Japanese language must have "a rule that turns an N-*o* phrase followed by another N-*o* phrase into N-***ni*** under the condition that only one verb exists in the sentence." And he says that *o*-causativizaton is semantically *coercive* and ***ni***-causativization ***noncoercive***. Yet this distinction is often lost due to the surface structure constraint on particles. See M. Shibatani (1975a) pp. 243-244.

19 James D. McCawley (1972). In this paper he presents such a sentence as (25a). However, I suppose, as Shibatani also says, that although an engine itself is inanimate, it is also true that it is possible to move with its own power. For this reason, the PC form may be allowed in this case. Even making allowance to this fact, we must acknowledge that this sentence is not natural enough as a Japanese sentence. See footnote 28 for a somewhat longer discussion of this problem.

PRINCIPLE II Japanese LC's can generally take inanimate things as their surface objects. In this case the particle must be *o*.

Next let us consider those cases in which *animate* things occur as objects in sentences. For example,

(26a) Taroo wa gunsyuu *o* hitorizutu heya ni hairaseta.
'Taro made a throng of people come into the room each in turn.'

(26b) Taroo wa gunsyuu *ni* hitorizutu heya ni hairaseta.
'the same as (a)'

(26c) Taroo wa gunsyuu *o* hitorizutu heya ni ireta.
'Taro lead a throng of people into the room each in turn.'

(26d) *Taroo wa gunsyuu *ni* hitorizutu heya ni ireta.

(27a) Bokusi wa murabito *o* kyookai no tyaperu ni atumaraseta.
'The parson made the villagers assemble in the chapel of the church.'

(27b) Bokusi wa murabito *ni* kyookai no tyaperu ni atumareseta.
'the same as (a)'

(27c) Bokusi wa murabito *o* kyookai no tyaperu ni atumeta.
'The parson assembled the villagers in the chapel of the church.'

(27d) *Bokusi wa murabito *ni* kyookai no tyaperu ni atumeta.

From these examples, we can probably revise the previous principle I and, furthermore add another one concerning Japanese causativization.

PRINCIPLE I' Japanese PC's, in general, must take animate things as their surface objects. In this case the surface particles may be *o* and *ni*.

PRINCIPLE III Japanese LC's may take animate things as their surface objects. In this case the surface partice must be uniformly *o*. The particle *ni* is not allowed to mark the objects of LC's.[20]

II. 5. 2. In this section we consider whether or not we can assure the validity of Principles I-III with those sentences which have embedded transitive sentences. First, consider

(28a) ??Saburoo wa kaze ni Ziroo *o* hukaseta.
'Saburo made the wind blow on Ziro.'

(28b) ??Saburo wa kaze ni Ziroo *ni* hukaseta.
'the same as (a)'

(28c) Saburo wa Ziroo ni hon *o* sutesaseta.
'Saburo made Ziro throw away the book.'

(28d) *Saburoo wa Ziroo ni hon *ni* sutesaseta.

20 The Japanese particle which marks the direct object in a sentence is *o*. (26d) and (27d) are ruled out for this reason. This fact seems to offer an indirect support for our assumption that an LC functions as a single verb in the surface structure.

Japanese sentences with LC's are not possible in this kind of construction for the reason that I have already noticed in footnote 20. I suppose that normally (28a) is not acceptable. But the situation assumed in (28a) might be possible if we suppose that Saburo was a sorcerer and he could communicate with a natural phenomenon such as a wind and ordered it to blow on someone.

The only grammatical form is (28c) in which the surface particles are *ni* and *o* and they are placed in this order. Hence, at a glance, Shibatani's analysis on the Japanese particles (cf. footnote 18) seems to be correct. Yet this observation is not so valid, since as we see below we have a case in which the relevant particles are not placed in that order. For example,

(29) Saburoo wa hon *o* Ziroo *ni* sutesaseta.
'Saburo made Ziro throw away the book.'

Of course, we may claim that (29) is an output structure obtained by the permutation of the elements. However this claim cannot capture the significant aspect of the Japanese causative sentences with embedded transitive sentences. A scrupulous examination will enable us to predict that in a causative sentence with an embedded transitive sentence the surface order of the relevant particles *o* and *ni* is not important, but rather that in such a causative sentence the NP accompanied by the particle *ni* is the causee and the NP accompanied by the particle *o* is the object of the caused event in the causative situation. For this reason the NP with *ni* must be animate things which have their own volition. Now we may present the last principle concerning the particles.

PRINCIPLE IV in Japanese sentences with embedded transitive sentences, which come to have PC's in surface structure, the surface order of the particles *o* and *ni* is not significant. The significant point is rather the fact *ni* is the marker of causee in the causative situation and *o* is the marker of the object of the caused event.[21] And the particle replacement is not possible.

This principle seems to be valid enough, for we can assure the roles played by the particles *ni* and *o* even if they appear in a much more complex structure. For instance,

(30a) Ziroo wa watasi *o* sono otoko *ni* naguraresaseta.
'Ziro made me be struck by the man.'

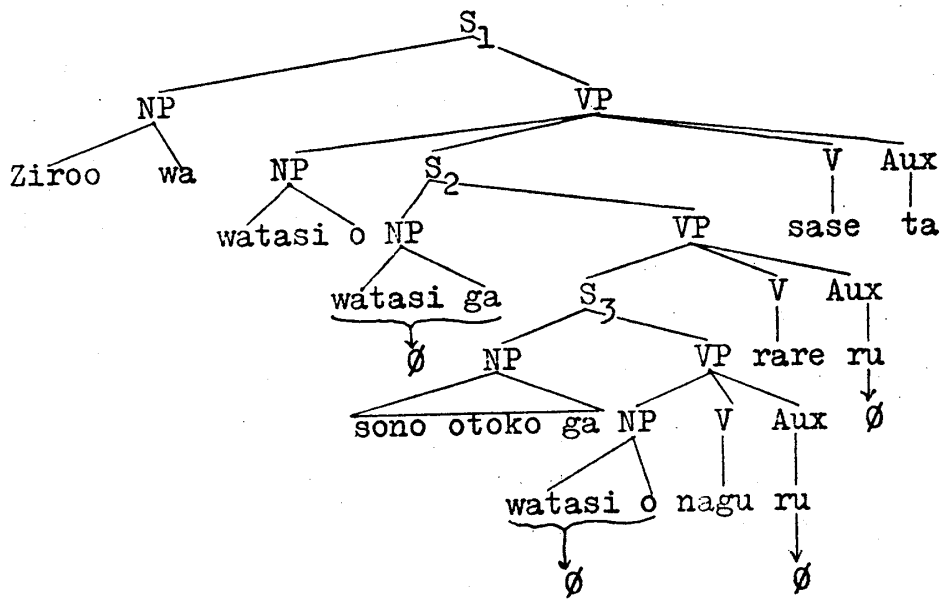
(30b) Ziroo wa watasi *ni* sono otoko *ni* naguraresaseta.[22]
'the same as (a)'

21 This principle, for instance, is able to explain the following examples.
(i) Watasi wa Ziroo ni Φ akaseta.
(ii) Watasi wa Φ Ziroo o naguraseta.
These two sentences are Ok under the condition with which one can recover the deleted terms.

22 According to Inoue's analysis, (i), for instance,
(i) Watasi wa Takesi ni Φ ame ni utaresaseta.
may be derived from "Watasi wa Takesi ni nanika o ame ni utaresaseta." This kind of analysis may be

At a glance these two examples seem to be cases of counter-examples to Principle IV, since the (b) sentence may be an output structure which was derived by the application of the particle replacement. Yet this is not the case. The underlying structure of this sentence is (31):

(31)



In the S_3 cycle nothing happens, and passivization applies in the S_2 cycle to derive, after Equi-NP deletion, *watasi ga sono otoko ni nagurareru* 'I am struck by the man.' This sentence is, in fact, a kind of intransitive sentence, so the particle replacement is possible, replacing *o* by *ni* in the S_1 cycle. Therefore, (30a, b) are not regarded as counter-examples to Principle IV.[23]

II. 5. 3. Summary

Now in this section we have considered the phenomenon of the causative constructions in the relation of the particle replacement and its possibility. For the ease of exposition of the phenomena we have examined in this section, we will now formulate the possibility of the particle replacement, presenting the following table.

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theoretically possible; as to (30b), however, as we see in (30b'), we cannot deny that there is an unnaturalness in it.

(30b') ???Ziroo wa watasi ni *dareka* o sono otoko ni naguraresaseta.

The reason for which (30b') is unnatural is given by the following assumption: the phrase *watasi ni* is actually the surface variant of *watasi o*, and the phrase seems to receive the interpretation as the direct object of the causative verb. K. Inoue (1965), p. 50.

23 If this argument is correct, then Kuroda's argument (1965) in which he tried to derive *o*-causativization and *ni*-causativization separately from different deep structures is not reasonable. For, in the structure of (31), the condition of the optional particle replacement of watasi *o* into watasi *ni* is not met until the intransitive sentence is generated after passivization applies in S_2. That passivization is a rule which pertains to the transformational component of the grammar is generally correct. And if, in the case of (31), the particle replacement must be applied after passivization, the argument that *o*-causativization and *ni*-causativization are derived separately from respective deep structures turns out to be contradictory.

TABLE I

prin. / p. r. / e. s. / s. v.		Pinc. I	P. R.	Prin. II	P. R.	Prin. I'	P. R.	Prin. III	P. R.	Prin. IV	P. R.
Intransitive	PC	○	*o* only			○	ok				
	LC			○	*o* only			○	*o* only		
Transitive	PC									○	not ok
	LC										
Objects		INANIMATE		INANIMATE		ANIMATE		ANIMATE		ANIMATE INANIMATE	

e. s.: embedded sentence

s. v.: surface verb

prin. / Prin.: Principle

p. r. / P. R.: particle replacement

Shibatani tries to explain the semantic differences, assuming that *o*-causatives and *ni*-causatives have different underlying structures. For example, (32a) and (32b), according to his analysis,[24]

(32a) Taroo wa Ziroo *o* arukaseta.

'Taro made Ziro walk.'

(32b) Taroo wa Ziroo *ni* arukaseta.

'Taro had Ziro walk.'

must be derived from (33a) and (33b) respectively.

(33a) Taroo Ziroo (Ziroo aruku) saseta.

(33b) Taroo (Ziroo aruku) saseta.

However, I suppose that (33b) is logically impossible as an underlying semantic representation for this structure obviously lacks a semantic validity. That is, I suppose, a situation itself (Ziroo aruku) cannot be an object of the causative verb *sase*. This is an illogical assumption. The object of the causative verb must be, generally, a volitional entity (animate things, especially human beings), regardless of his claim that an *o*-causative is coercive in meaning and *ni*-causative noncoercive. This condition seems to be language-independent. Therefore we may claim that (32b) as well as (32a) must be presumably derived from the same single underlying structure: that is, from (33a) in which the higher sentence contains the animate volitional entity *Ziroo*. This is the only possible source for both (32a) and (32b).

I want to demonstrate that in a causative sentence there must occur a volitional entity as the causee in the causative situation. This assumption will turn out to be quite plausible. As we will soon observe in the following example, there seems to be a good ground to believe that we may well claim that the underlying structure of (34a) is (34b).

24 M. Shibatani (1975a), pp. 522-523.

(34a) Ziroo wa otooto o nikai e ageta.

'Ziroo took his brother upstairs.'

(34b) *Ziroo* wa *Ziroo* o (otooto ga nikai e agaru) saseta.

We have a fine piece of evidence for this assumption, since, if the reflexive pronoun appears in (34a), as we see in (35), we have only one possible semantic interpretation.

(35) *Ziroo* wa otooto o ***zibun*** no isi de nikai e ageta.

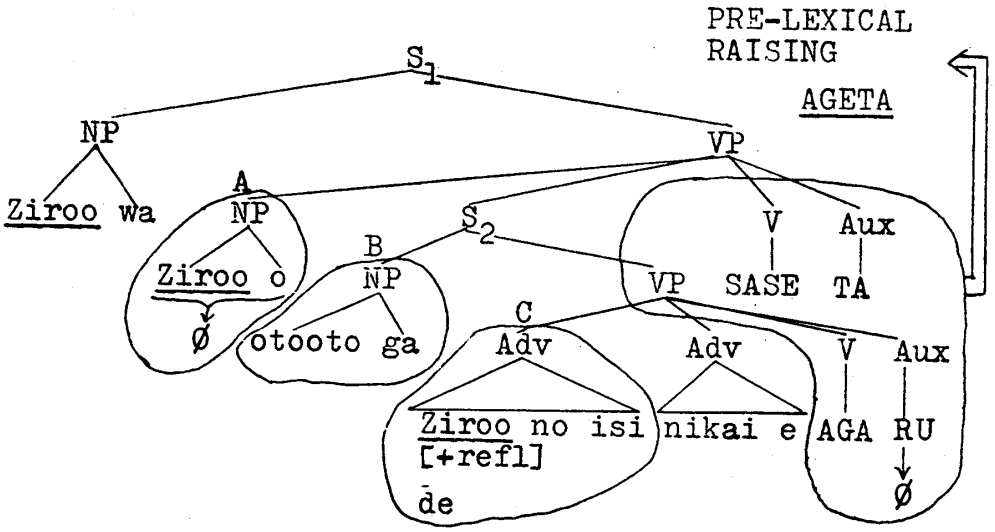
'Ziro took his brother upstairs by ***his*** own will.'

The underlying semantic structure of (35) seems to be (36).

(36) *Ziroo* wa *Ziroo* o (otooto ga *Ziroo* no isi de nikai e AGARU) SASETA.

I have already shown in section II. 2 a similar argument that the underlying semantic structure of (35) must be something like (36) and its tree structure is (37) :

(37)



Our assumption that in the A node Ziroo must be present on an underlying level enables us to predict that in the causative situation of this sentence only the causer's volition is under consideration.[25] That is, the hearers can identify the situation in which the surface reflexive form ***zibun*** in the C node refers to the subject *Ziroo* from the fact that the speaker uses the LC form *ageru*.

Now let us formalize our findings concerning the particle replacement in Japanese causativization.

(38) A US. ___NP_i o (NP_i ga Vi) saseru ⟶

25 At present, the condition under which this reflexive form can be deleted is not clear. And if we believe the cyclical nature in syntax, taking the view that *Ziroo* is present underlyingly in the node A, we cannot reflexivize nor delete this *Ziroo* until the S_2 cycle is derived. So our discussion here becomes much more valid. This *Ziroo* seems to be deletable after undergoing reflexivization, and the reason for its deletion seems to be given in the fact that a Japanese transitive verb cannot take two NPs accompanied by *o* in the surface simplex sentence. Because of this surface structure constraint, a gratuitous reflexive form seems to be deleted.

SS. ____NP_i $^{o}_{ni}$ (ϕ) PC

B US. ____NP_i o (NP_i ga NP_j o Vt) saseru ⟶

SS. ____NP_i ni (ϕ NP_j o) PC

C US. ____NP_i o (NP_i ga Vi) SASERU ⟶

SS. ____NP_i o (ϕ) LC

US.: Underlying Structure

SS.: Surface Structure

Vi.: Intransitive Verb

Vt: Transitive Verb

This set of formulated rules naturally entails Shibatani's Surface Structure Constraint on particles.[26] For example, 'Taroo wa Ziroo *ni* doa *o* hirakaseta.' can be accounted for by his constraint. However, we have two surface syntactic representations in the case of, for instance, (37) as we see in (39), which cannot be accounted for only with his surface structure constraint.

(39a) Ziroo wa otooto *o* zibun no isi de nikai e agaraseta.
'Ziro made his brother go upstairs by his own will.'

(39b) Ziroo wa otooto *ni* zibun no isi de nikai e agaraseta.
'the same as (a)'

To account for this phenomenon, we may classify the type of causation of the example in (39). This is of type C in our Table I. In this type of causative structure, an intransitive sentence is embedded in the matrix causative sentence. As we have already shown in Table I, the possibility of the particle replacement must be limited to this type of causation in Japanese.

Along with Kuroda's analysis of causation in Japanese (1965), Shibatani's analysis (1975) is one in which he tries to explain the semantic differences by assuming that *o*-causativization and *ni*-causativization must come from separate underlying structures. However, I would like to claim that this analysis is not correct, since the environment in which *o* may be optionally replaced by *ni* is limited to the case of the C causation in (38).[27] Now we may present the

26 Cf. footnote 18

27 My argument here obviously follows K. Inoue's in which she assumes that there exists a particle replacement in Japanese. See K. Inoue (1965), p.52.

Furtheamore there is another independent motivation that can corroborate our assumption that there must be particle replacements in Japanese. For example, the Japanese "do so" construction appears, as we have shown, in the conjoined sentence as the string "——, X *mo soo suru.*" The particle following X, that is, *mo* is not the underlying structure particle. The underlying structure, for instance, of the sentence "Ziroo ga musume o kuruma ni noseta, suruto Akira *mo. soo sita.*" is "Ziroo ga musume o kuruma ni noseta, suruto Akira ga musume o kuruma ni noseta." And to this underlying structure transformational rules such as Anaphoric VP deletion (soo suru replacement) and the particle replacement in question seem to apply to derive the surface structure. The hypothesis that there are particle replacements in the transformational component is presumably a corroborative assumption.

formalized rule of the particle replacement in Japanese causativization as follows:

(40) Particle Replacement

NP-$_o$ ⟶ NP-$_{ni}$ / NP has a feature specification [+Animate] and [+Volitional] ___PC

For the reason mentioned above, we may as well claim that *ni*-causativization is, in fact, a surface variant of *o*-causativization, being generated by the particle replacement; and that it does not have an underlying structure status different from that of *o*-causativization.[28]

28 I have already shown that the particle replacement is possible only in a sentence with an embedded intransitive one. Yet there seems to be an example which cannot undergo this transformation with all satisfaction of the condition for the replacement. For instance, Shibatani gives such an example as is given below:

(i) Omoiyari no aru isya ga konsuizyootai ni ari tasukaru mikomi no nai byoonin o/ *ni sinaseta.
'The sympathetic doctor let the patient, who was in a coma and had no hope of survival, die.'

In this case the transformational rule in question cannot be applied. This problem, I suppose, is a problem that should be handled purely in semantics, since the structural description of the particle replacement is met. It is true that in this sentence the object of the PC *sinaseru* has the feature specification [+Animate]; however, it is also true that the NP does not have the feature specification [+Volitional]. That is the reason why this sentence cannot undergo the particle replacement. According to Shibatani's analysis, the underlying structure of *o*-causativization and *ni*-causativization are different. For ease of exposition we may take up (33) again.

(33a) Taroo Ziroo (Ziroo aruku) saseta.

(33b) Taroo (Ziroo aruku) saseta.

In his analysis, (33a) is the underlying structure for "Taroo wa Ziroo o arukaseta." which, in his terminology, has the "coercive" reading, and (33b) is for "Taroo wa Ziroo ni arukaseta." which has the "non-coercive" reading. At present, let us assume that his analysis is feasible.

Next, let us consider how we can describe the underlying structure of (i). Shibatani himself gives the following underlying structure (ii) for (i):

(ii) Isya (byoonin sin) saseta.

Now if we dare to support the analysis of (33) by Shibatani, it is quite obvious that there arises a theoretical contradiction. Just as (33b) is given as the underlying structure for *ni*-causativization, so (ii) must show up in the form of *ni*-causativization at the surface level, but the *ni*-causative in (i) is not good. Therefore Shibatani's analysis (33) is theoretically untenable.

Our analysis, however, can exylain this phenomenon without difficulty; in our analysis with the apparatus of the particle replacements this problem does not originate. For the object of the causative verb in (i) may as well be said to have the feature [−Animate] in that the byoonin (the patient) no longer performs volitional activity, since he has no spontaneous will, being in a coma. In this sense the sentence in (i) belongs to our Type A causation. This is the reason for the impossibity of the particle replacement in (i).

I suppose that the underlying structure of (i) is (iii) rather than (ii) by Shibatani.

(iii) Isya byoonin (byoonin sin) saseta.

And I believe that there are good grounds to support this analysis instead of Shibatani's. A human being can live or die by another person's will even if he has no spontaneous volition. The structure given in (iii) seems, in a sense, to correspond to McCawley's example which was given earlier, which I will repeat here for convenience:

(25a) ?Taroo wa enzin o tomaraseta.

I have given the sentence a question mark to imply that it is marginally ok as a Japanese sentence. If we compare the naturalness of (i) and this sentence, the degree of naturalness, hence of acceptability, is much larger in (i) than in (25a). It is a quite natural phenomenon that a human being lives or dies eveh if he has no spontaneous will. Suppose that a newborn baby is not cared for from anyone. He is,

III Conclusion

In this paper I have attempted to present a generative semantic account of Japanese causativization. I have shown a theoretical superiority of generative semantics to interpretive semantics in that the former can account for the probability of lexical insertions in the transformational component (in the interpretive semantic view of a grammar) while the latter cannot. After all, I suppose that I could shed some light on the problem of what possible lexical structures (and items) should be like in the sequence of phrase-makers ($P_0...P_i...P_n$) in which P_i is the underlying structures and P_n is the surface structure; and on the problem of what pre-lexical syntactic transformations should be like.[29]

In Japanese there are good readons for the assumption that LC's and PC's should be handled in a transformational account. This is because in almost all the cases LC's and PC's have the same lexical roots.[30] What is important, therefore, is the following. A PC is appropriate for a situation in which the causee is able to perform the contiguous event, which must occur as the result of the causing event by the causer, with (the causee's) volition. On the contrary, a PC is inappropriate for a situation, as Shibatani observes, when the volition of the causee is absent; in this case an LC form must be called for. It seems to depend not upon our purely grammatical knowledge (syntactic knowledge) but upon our pragmatic knowledge—knowledge to distinguish volitional entities from non-volitional ones, and some extralinguistic cases in which we should discern whether the causees can possibly be volitional or not, etc.—which forms of PC's and LC's we should use at the surface level. It ought to be recognized, therefore, that our pragmatic knowledge of the world plays a significant and definitive role in our selection of the alternative determination of whether the string of underlying semantic predicates should be manifested as an LC or a PC in our actual performance.

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as it were, made to live from his parents' intention to bring him up. On the contrary, we must assume in interpreting (25a) some such unusual situation as Shibatani gives. See M. Shibatani (1975a) pp. 269-270. Also see footnote 19.

29 To cite McCawley's words:

> One novel aspect of this approach to lexical insertion is that it allows sharp limits to be put on what is a 'possible lexical item' in each language. Specifically, this approach predicts that a language will only permit lexical items which correspond to syntactic constituents that arise from well-formed semantic representations through existing prelexical transformations.

And hence it is natural for him to end his paper by saying that "thus, the proposal of prelexical transformations will give only a partial answer to the question of what is a possible lexical item in a given language." J. D. McCawley (1973), pp. 254-255.

30 Cf. Inoue (1976).

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